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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,162	06/26/2003	Nanu Brates	M894.312-0011	5627
164	7590	04/27/2005	EXAMINER	
KINNEY & LANGE, P.A. THE KINNEY & LANGE BUILDING 312 SOUTH THIRD STREET MINNEAPOLIS, MN 55415-1002			GUHARAY, KARABI	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 04/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/607,162

Applicant(s)

BRATES ET AL.

Examiner

Karabi Guharay

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/14/2003</u> | 6) <input type="checkbox"/> Other: ____  |

***Claim Objections***

Claim 1 is objected to because of the following informalities:

Claim 1 recites "end region wall portion" and subsequently recites 'said end wall portions" for clarity of the claim, "said end wall portions" should be changed to "end region wall portions". Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In this instant, claim 1 recites "effective joined inner diameter at each end wall portion". It is not clear what is meant by "effective joined inner diameter" since side walls except for the region having "effective operation inner diameter" have different diameters, such as, one is the diameter of the end region wall portions (end tubes) and another diameter at the joining portion (22a & 22b) which joins end wall portions with effective operation inner diameter.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Keijser et al. (US 6300729), and further in view of Takeji et al. (US 6724144).

Regarding claim 1, Keijser et al. discloses an arc discharge metal halide lamp (Fig 1 & Fig 2) comprising a discharge chamber having light permeable walls (ceramic wall) of a selected shape bounding a discharge region (discharge space 11) of a selected volume including therein a pair of end region wall portions (34, 35) through each of which a corresponding one of a pair of electrode (4, 5) are supported to have interior ends positioned in the discharge region (lines 6-42 of column 3) separated by a length (EA) having a joined inner diameter at each of the end wall portion (diameter at the end tubes 34, 35) and an effective operation inner diameter (Di) over the separation length (EA) where  $EA/Di \geq 2.5$  (see abstract) and length of the side walls between the end region is greater than the effective operation inner diameter, and ionizable materials provided in said discharge region of the discharge chamber (lines 9-10 of column 3).

But, Keijer et al. do not disclose that the intersection of the planes containing centers of the electrodes with the inner surfaces of the end wall portions are smooth and have radii of curvature there along equal to or less than half of that corresponding effective joined diameter and are separated from the interior end of the electrodes by more than 1mm.

However, Takeji et al. in the same field of metal halide discharge lamp (Fig 2-4) discloses an arc discharge tube having end wall portions (11c) and an discharge region (11A), wherein the intersection of the planes containing centers of the electrodes (22) with the inner surfaces of the end wall portions are smooth and have radii of curvature (Fig 3-4) there along equal to or less than half of that corresponding effective joined diameter ( $R = 2.5$  mm, which less than half of the effective joined diameter (7 mm) ) and are separated from the interior end of the electrodes by more then 1mm (about  $7/2 \approx 0.7$  mm which is about 2.8 mm, lines 14-27 of column 4). Takeji further teaches that such specific shape of the joining portion provides long life of the lamp by avoiding cracks (lines 45-57 of column 1).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate special shape of the joining portion as disclosed by Takeji in the device of Keijser, since this will provide further improvement of the life of the lamp.

Regarding claim 2, Keijser et al. disclose that the discharge chamber is formed of polycrystalline alumina (lines 37-40 of column 1).

Regarding claims 3-6, Keijser et al. disclose that the  $EA/D_i$  is greater than equal to 2 but less than equal to 5.5 (lines 58-59 of column 2).

Regarding claims 7-11, Keijser et al. disclose that the ionizable materials include metal halides such as iodides of Ce and Na (lines 10-11 of column 3) further teaches iodides of rare earth metal which include praseodymium (lines 64-66 of column 1).

Regarding claim 12, Keijser et al. discloses an arc discharge metal halide lamp (Fig 1 & Fig 2) comprising a discharge chamber having light permeable walls (ceramic wall) of a selected shape bounding a discharge region (discharge space 11) of a selected volume including therein a pair of end region wall portions (34,35) through each of which a corresponding one of a pair of electrode (4, 5) are supported to have interior ends positioned in the discharge region (lines 6-42 of column 3) separated by a length (EA), said wall having portions thereof as sides between said wall portions with an interior surface forming a truncated right cylindrical having an inner diameter (Di) over the separation length (EA) where  $EA/Di \geq 2.5$  (see abstract) and length of the side walls between the end region is greater than the effective operation inner diameter, and ionizable materials provided in said discharge region of the discharge chamber (lines 9-10 of column 3).

But, Keijer et al. do not disclose hemispherical shaped end region wall portions and end wall portions each having inner surfaces having a radius equal to half of that corresponding inner diameter and are separated from the interior end of the electrodes by more than 1 mm.

However, Takeji et al. in the same field of metal halide discharge lamp (Fig 2-4) discloses an arc discharge tube having end wall portions (11c) and an discharge region (11A), containing centers of the electrodes (22), having hemispherical shape of end regions with the inner surfaces of the end wall portions have radius (Fig 3-4) equal to half of that corresponding inner diameter (7 mm, which equal to about half of the inner diameter joined diameter (13 mm, lines 3-7 of column 5) and are separated from the

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interior end of the electrodes by more than 1mm (about 7/2 -- 0.7mm which is about 2.8 mm, lines 14-27 of column 4). Takeji further teaches that such specific shape of the joining portion provides long life of the lamp by avoiding cracks (lines 45-57 of column 1).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate special shape of the joining portion as disclosed by Takeji in the device of Keijser, since this will provide further improvement of the life of the lamp.

Claim 13 recites essentially the same limitations of claim 2. Thus claim 13 is rejected as claim 2 (see rejection of claim 2).

Claims 14-17 recite essentially the same limitations of claims 3-6 respectively. Thus claims 14-17 are rejected as claims 3-6 (see rejections of claims 3-6).

Claims 18-22 recite essentially the same limitations of claims 7-11 respectively. Thus claims 18-22 are rejected as claims 3-6 (see rejections of claims 7-11).

#### ***Other Prior Art Cited***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure : Van Vliet et al. (US 5973453); Miyazawa (US 6747411); JP 2003-86130.

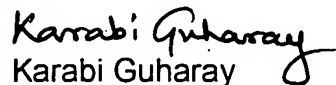
#### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karabi Guharay whose telephone number is (571) 272-2452. The examiner can normally be reached on Monday-Friday 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Karabi Guharay  
Patent Examiner  
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